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IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

Applicant: Daniel SauFu Mui

Assignee: UEI Cayman Inc.

Title: "Relaying Key Code Signals Through a Remote Control Device"

Serial No.:   10/737,029   Filed: December 16, 2003

Patent No.:   7,589,642 B1   Issued: September 15, 2009

Examiner: Vernal U. Brown   Group Art Unit: 2612

Atty. Doc. No.: ZIL-568

ATTN: Certificate of Corrections Branch   September 15, 2009
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Certificate

SEP 2 9 2009

REQUEST FOR CERTIFICATE OF CORRECTION   of Correction

Pursuant to 37 CFR 1.322, Applicant requests that the Director issue a certificate of correction to correct a mistake in the printing of the above-identified patent incurred through the fault of the Patent Office. The mistake in the printing of claim 2 is apparent when the attached page of USP 7,589,642 (marked to show the mistake) is compared to the attached page of the Listing of Claims that was submitted with an amendment on May 7, 2009.

The requested correction is submitted on the attached Certificate of Correction form, PTO/SB/44.

<table>
<tr><td>

I hereby certify that this correspondence is being deposited with the United States Postal Service as First Class Mail in an envelope addressed to: ATTN: Certificate of Correction Branch, Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450.

By *Darien K. Wallace*
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Date of Deposit: September 21, 2009

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Respectfully submitted,

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UNITED STATES PATENT AND TRADEMARK OFFICE
CERTIFICATE OF CORRECTION

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PATENT NO.   : 7,589,642 B1

APPLICATION NO.: 10/737,029

ISSUE DATE   : September 15, 2009

INVENTOR(S)   : Daniel SauFu Mui

It is certified that an error appears or errors appear in the above-identified patent and that said Letters Patent is hereby corrected as shown below:

Column 10, line 25, the words "indicates a keV on said" should be changed to --indicates a key on said--.

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11, are automatically transmitted from learning remote control device 11 in the form of RF signals to key code generator device 12. Key code generator device 12 in turn communicates the captured strings of timing information through coaxial cable 36 and network 38 to database of codesets 39. Personnel maintaining database of codesets 39 then analyze the timing information and generate a codeset that describes the key codes captured by learning remote control device 11. In this way, a new codeset containing key data, systems codes and timing information is added to database of codesets 39. Rather than storing the information as a new codeset that includes separate key codes and timing information, the information for each keystroke can be stored in database of codesets 39 in the form of interval times.

A single system 10 is therefore described that can support numerous different types of electronic consumer devices that can use multiple different codesets. The remote control device 11 of the system need not include a large memory and stored many codesets. Rather, the remote control device 11 need only relay individual key codes. Remote control device 11 can therefore be a relatively inexpensive device that includes only a small amount of memory. In addition to requiring only a small amount of memory, the very same remote control device 11 can control an electronic consumer device that uses a codeset or protocol that was not in existence at the time the remote control device 11 was delivered to the user. The amount of writable memory (for example, random access memory (RAM) or flash memory) on the remote control device 11 may be so little that it may not be adequate to store a conventional codeset. The bulk of the memory of the remote control device 11 may be relatively inexpensive mask-programmable read only memory (ROM). By reducing the amount of writable memory on remote control device 11, the cost of remote control device 11 is reduced.

Although the present invention has been described in connection with certain specific embodiments for instructional purposes, the present invention is not limited thereto. Although the method is described above in connection with an inexpensive remote control device whose primary purpose is to control an electronic consumer device, the method can be employed in connection with other types of devices. Due to the limited amount of memory and intelligence required of the remote control device in the present method, the functionality of remote control device 11 can be incorporated into an RF-enabled device (such as a cell phone or RF-enabled personal digital assistant (PDA) or RF-enabled wrist watch or RF-enabled keyboard) without significantly increasing the cost of the device. The first carrier signal used to communicate between the remote control device and the key code generator device need not be an RF signal, and the second carrier signal used to communicate between the remote control device and the electronic consumer device need not be an IR signal. Both the first and second carrier signals can be the same type of signals, for example IR signals. The key code generator device can transmit key codes to the electronic consumer device to be controlled via a hardwired connection rather than a wireless link. The type of key code signal relayed through the remote control device is not limited to any particular protocol.

Although key code generator device 12 is a set-top box in the embodiment of FIG. 1 above, in other embodiments the key code generator device 12 is another type of electronic consumer device such as, for example, a television, a stereo radio, a digital video disk player, a video cassette recorder, a personal computer, a set-top cable television box or a set-top satellite box. Although the keystroke indicator signal can be an indication of a pressed key where there is a one-to-one

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relationship between the key and a function to be performed, in other embodiments a keystroke indicator signal indicates a selected function that is not associated with a specific key on the remote control device. For example, a function can be selected choosing a function from a menu that is displayed on the remote control device. Accordingly, various modifications, adaptations, and combinations of various features of the described embodiments can be practiced without departing from the scope of the invention as set forth in the claims.

What is claimed is:

1. A method comprising:

(a) receiving a keystroke indicator signal from a remote control device, wherein the keystroke indicator signal indicates a key on said remote control device that a user has selected;

(b) generating a key code within a key code generator device using the keystroke indictor signal;

(c) modulating said key code onto a carrier signal, thereby generating a key code signal: and

(d) transmitting said key code signal from said key code generator device to said remote control device.

2. A method comprising:

(a) receiving a keystroke indicator signal from a remote control device, wherein the keystroke indicator signal indicates a key on said remote control device that a user has selected;

(b) generating a key code within a key code generator device using the keystroke indictor signal;

(c) modulating said key code onto a carrier signal, thereby generating a key code signal: and

(d) transmitting said key code signal from said key code generator device to an electronic consumer device.

3. The method of claim 1, wherein said key code consists of a binary number.

4. The method of claim 1, wherein said key code comprises a binary number and timing information, and wherein said timing information defines how said binary number is modulated in (c) onto said carrier signal.

5. The method of claim 2, further comprising:

(e) pressing a power-on key of said remote control device causing said remote control device to transmit said keystroke indicator signal that is received in (a), wherein said key code signal transmitted in (d) is received onto said electronic consumer device, and wherein said pressing in (e) causes said electronic consumer device to turn on.

6. The method of claim 1, wherein said carrier signal is in a radio frequency band, wherein said key code signal is received by said remote control device, and wherein said method further comprises:

(e) modulating said key code onto a second carrier signal, thereby generating a second key code signal, said modulating being performed on said remote control device wherein said second carrier signal is in an infrared frequency band; and

(f) transmitting said second key code signal from said remote control device to an electronic consumer device.

7. The method of claim 6, further comprising:

(g) pressing a power-on key of said remote control device causing said remote control device to transmit said keystroke indicator signal that is received in (a), wherein the pressing in (g) causes said electronic consumer device to turn on.

8. The method of claim 1, wherein said key code generated in (b) is part of a codeset, and wherein said remote control device does not store said codeset.

Amendments to the Claims:

This listing of claims replaces all prior versions and listings of claims in the application.

Listing of Claims

1. (canceled)

2. (currently amended): ~~The method of Claim 1, wherein said key code signal is transmitted in (d) from said key code generator device~~A method comprising:

(a) receiving a keystroke indicator signal from a remote control device, wherein the keystroke indicator signal indicates a key on said remote control device that a user has selected;

(b) generating a key code within a key code generator device using the keystroke indictor signal;

(c) modulating said key code onto a carrier signal, thereby generating a key code signal; and

(d) transmitting said key code signal from said key code generator device to said remote control device.

3. (currently amended): ~~The method of Claim 1, wherein said key code signal is transmitted in (d) from said key code generator device~~A method comprising:

(a) receiving a keystroke indicator signal from a remote control device, wherein the keystroke indicator signal indicates a key on said remote control device that a user has selected;

(b) generating a key code within a key code generator device using the keystroke indictor signal;

(c) modulating said key code onto a carrier signal, thereby generating a key code signal; and